

# REMARKS

In the Office Action, the Examiner rejected the claims under 35 USC §103. These rejections are fully traversed below.

Claims 2 and 16 have been cancelled. Claims 1, 3-15 and 17-23 remain pending. Reconsideration of the application is respectfully requested based on the following remarks.

## REJECTION OF CLAIMS UNDER 35 USC §103

In the Office Action, the Examiner rejected the claims under 35 USC §103 as being unpatentable over Malkin et al., U.S. Patent No. 6,061,650, ('Malkin' hereinafter) in view of Valentine et al, U.S. Patent No. US 2002/0058507 A1, ('Valentine' hereinafter).

The present invention optimizes voice over IP in a Mobile IP environment. This is accomplished, in part, by using a local H.323 gateway rather than an H.323 gateway on the home network when possible. In this manner, the routing path is minimized thereby reducing latency in the voice traffic. It is also important to note that through identification of a H.323 gateway on the foreign network in the Foreign Agent advertisement, the node may communicate with the H.323 gateway in the foreign network. Generally, a Mobile Node will receive an agent advertisement from a Foreign Agent when the Mobile Node is within the vicinity of the Foreign Agent. Thus, since the Foreign Agent is in the vicinity of the Mobile Node, the node will be able to identify an H.323 gateway on the foreign network such that the routing path is minimized. Neither of the cited references, separately or in combination, discloses or suggests a way to ensure that a H.323 gateway that is closest to the Mobile Node is contacted.

As set forth in the Background section of Applicant's specification, "In a Mobile IP environment, when a node roams to a Foreign Agent on a foreign network, calls are often set up through a gatekeeper on the roaming node's home network. This gatekeeper will then select an H.323 gateway to the PSTN that is located on the home network associated with the roaming node's Home Agent. However, it is important to note that the distance between the

Home Agent and the Foreign Agent may be substantial. Moreover, voice is particularly sensitive to latency. In view of the above, it would be desirable to improve the routing path in order to optimize voice over IP in a Mobile IP environment.”

Neither Valentine nor Malkin, separately or in combination, teach or suggest the problem that is solved by the claimed invention. Specifically, neither of the cited references, separately or in combination, discloses or suggests the problem that occurs when an H.323 gateway that is located on the home network is selected. Moreover, neither Valentine nor Malkin discloses or suggests improving the routing path in order to optimize voice over IP in a Mobile IP environment, or the need to do so due to sensitivity of voice traffic to latency.

Malkin discloses a method and apparatus for transparently providing mobile network functionality. See Title. Malkin describes a conventional process of operation of a remote node as it establishes a remote connection over a service provider’s network. See col. 2, lines 13-40. The user dials into a Remote Access Server (RAS) via the remote node. The RAS, using a user name and other information provided by the remote node queries the service provider’s Tunnel Management System (TMS) to obtain the address of the gateway to the remote node’s home network. See col. 2, lines 26-40.

Malkin does disclose a remote node that can send and receive datagrams from any point of attachment without having to change its network address and without having to load additional software onto the remote node to provide the mobile functionality. See Malkin, col. 2, lines 1-5. The Examiner further cites col. 8, lines 18-21 of Malkin, which recite a “computer-readable medium having stored thereon a plurality of instructions including a first set of instructions for providing a remote node with a mobile network connection.” It is not disputed that Malkin discloses a method for providing mobile network functionality. What is disputed is the manner in which the mobile network functionality is implemented.

The Examiner points to the fact that Malkin teaches a gateway on page 2, line 50. Specifically, col. 2, lines 49-57 disclose that the “RAS 12 forwards the authentication request to the appropriate gateway 22. The gateway 22 then forwards the request via a virtual circuit (e.g., Frame Relay or ATM virtual circuit) to the Customer Premise Equipment (CPE) 24 of the home network 18, which is then responsible for forwarding the request to the appropriate AS 20 located in the home network 18.” (Emphasis added). Similarly, claim 1 of Malkin clearly recites that authentication of the node is performed through an authentication server (AS) associated with the home network. The Examiner further cites col. 1, lines 29-35 of

Malkin, which merely states that “to implement the mobile routing protocols, additional software needs to be loaded onto the remote node to enable the node to communicate with its original network without having to change its network address.” Again, it is undisputed that mobile network functionality is not novel. The novelty lies in the manner in which mobile network functionality is implemented. Since Malkin discloses a routing path that includes an AS on the roaming node’s home network, Malkin teaches away from the present invention, which enables calls to be routed via a H.323 gateway on the foreign network.

The Examiner seeks to cure the deficiencies of Malkin with Valentine. Valentine discloses methods and apparatus for allowing an Internet gateway to directly request or otherwise access routing and/or location information within a home location register (HLR) within a mobile communications network. This allows for Voice over Internet Protocol (VoIP) communications to be conducted without requiring excessive signaling and/or processing within the mobile communications network. However, Applicant refers to FIG. 3a and col. 2, paragraph 22 of Valentine, which states “As shown, within Internet 106, or similar network, there is provided an improved gateway 112b’ having a roaming number application 200 that is configured to allow for direct querying/access to subscriber information (e.g., location information) associated with mobile station 114. The improved gateway 112b’ as such, becomes a IP roaming number gateway that is capable of determining where mobile station 114 is located within PLMN 116, for example. Thus, as depicted, gateway 112b’ directly queries HLR 120 for the location of mobile station 114, when a call is placed from terminal 102a. HLR 120 provides the requested subscriber location information to gateway 112b’. Subsequently, as depicted in FIG. 3b, gateway 112b’ then routes the call to MSC/VLR 122. This basic operation, therefore reduces that amount of processing/signaling support required by the various resources in PLMN 116.” Thus, Valentine discloses a mechanism for supporting a call from a terminal to a mobile station by determining the location of the mobile station being called. See col. 1, paragraphs 6-9. Specifically, as set forth above, Valentine require that the gateway query the HLR for the subscriber’s location. Accordingly, Valentine only discloses a mechanism for determining a route for incoming calls to the mobile station. See col. 3, claim 1 of Valentine. In no manner does Valentine disclose or suggest methods or apparatus for enabling a node visiting a Foreign Agent supporting Mobile IP to initiate a call or send IP packets including voice

information via an IP address that is requested from an H.323 gateway on the foreign network.

Neither Valentine nor Malkin, separately or in combination, teach or suggest the problem that occurs when an H.323 gateway that is located on the home network is selected. Moreover, neither Valentine nor Malkin discloses or suggests improving the routing path in order to optimize voice over IP in a Mobile IP environment, or the need to do so due to sensitivity of voice traffic to latency. In fact, even if Malkin and Valentine were combined, the routing path would continue to include a gateway on the roaming node's home network, rather than on the foreign network. Routing voice traffic via a gateway on the mobile node's home network would result in latency that, while acceptable for general IP packets, would be unacceptable for voice traffic. As such, the combination of the cited references would fail to achieve the result achieved by the pending claims.

Applicant addresses the independent claims to further address some of the distinctions between the cited art and the pending claims. Each of claims 1, 18, 20, and 22 is directed to a method, computer-readable medium or apparatus for enabling a node visiting a Foreign Agent supporting Mobile IP to send IP packets including voice information via an IP address obtained from an H.323 gateway, the Foreign Agent being on a foreign network, comprising:

sending an agent advertisement, the agent advertisement identifying an H.323 gateway on the foreign network;

receiving a packet from the mobile node, the packet being addressed to the H.323 gateway on the foreign network and requesting an IP address associated with a destination;

forwarding a packet including the requested IP address to the mobile node; and

receiving an IP packet including voice information from the mobile node, the IP packet being addressed to the IP address.

Malkin does generally disclose the sending of agent advertisements by Home Agents and Foreign Agents. Typically, a mobile node obtains the network prefix from the agent advertisement to ascertain whether it is in a foreign network or in its home network. If it is in its home network, it need not register with its Home Agent. However, if it is in a foreign network, it registers with its Home Agent via the Foreign Agent. While an agent advertisement transmitted by a Foreign Agent generally includes the Foreign Agent care-of

address, the agent advertisement typically does not include an address of a H.323 gateway on the foreign network.

It is important to note that Malkin neither discloses nor suggests providing an address of a H.323 gateway in an agent advertisement transmitted by a Foreign Agent. In fact, neither of the cited references, separately or in combination, discloses or suggests an agent advertisement including an address of a H.323 gateway on the foreign network or the home network. Specifically, Malkin neither discloses nor suggests sending an agent advertisement identifying an H.323 gateway on the foreign network by a Foreign Agent. Thus, Malkin neither discloses nor suggests receiving a packet from a node, where the packet is addressed to the H.323 gateway on the foreign network identified in the agent advertisement, where the packet requests an IP address associated with a destination. Valentine fails to cure the deficiencies of Malkin.

Each of claims 15, 19, 21, and 23 is directed to a method, computer-readable medium or apparatus for enabling a mobile node visiting a Foreign Agent on a foreign network to send IP packets including voice information via an IP address obtained from an H.323 gateway, comprising:

receiving an agent advertisement, the agent advertisement identifying an H.323 gateway on the foreign network;

sending a packet from the mobile node, the packet being addressed to the H.323 gateway on the foreign network and requesting an IP address associated with a destination;

receiving a packet including the requested IP address; and

sending an IP packet including voice information from the mobile node, the IP packet being addressed to the IP address.

As set forth above, Malkin neither discloses nor suggests receiving an agent advertisement identifying an H.323 gateway on the foreign network. Thus, Malkin neither discloses nor suggests sending a packet from the node, where the packet is addressed to the H.323 gateway on the foreign network identified in the agent advertisement and the packet requests an IP address. Valentine fails to cure the deficiencies of Malkin.



The dependent claims depend from one of the independent claims and are therefore patentable for at least the same reasons. However, the dependent claims recite additional limitations that further distinguish them from the cited references. Thus, it is submitted that the dependent claims are also patentable for at least the same reasons. The additional limitations recited in the independent claims or the dependent claims are not further discussed as the above discussed limitations are clearly sufficient to distinguish the claimed invention from Malkin in view of Valentine. Thus, it is respectfully requested that the Examiner withdraw the rejection of the claims under 35 USC §103.

Reconsideration of the application and an early Notice of Allowance are earnestly solicited. If there are any issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee, required in connection with the filing of this Amendment is to be charged to Deposit Account No. 50-0388 (Order No. CISC150).


**RECEIVED**

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Respectfully submitted,

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